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Snake study may shed light on venom composition. See story, p. 2



Small Animal Rehabilitation Center now accepting new patients

BY SARAH CAREY

Pets that suffer from physical ailments related to orthopedic and neurologic disease, arthritis or obesity, may benefit from a variety of treatment tools now available at the University of Florida's Small Animal Rehabilitation and Fitness Center.

The rehabilitation service launched officially last year with an underwater treadmill, but was only available to in-house patients of the UF VMC. Since then the program has expanded to include low level laser therapy, a land treadmill, neuromuscular electrical stimulation, pulsed electromagnetic field therapy, extracorporeal shockwave therapy and stem cell therapy.

"We will begin accepting new patients this month, but until completion of our new small animal hospital, the rehabilitation and fitness center will have a limited number of appointments," said program director Dr. Kristin Kirkby, a board certified small animal surgeon who is pursuing her Ph.D. in the area of veterinary rehabilitation. "Initially, four to six new patients will be seen on Mondays of every week, excluding holidays," said Kirkby, who also is certified in canine rehabilitation.

"The remainder of the week will be dedicated to treating these patients, in addition to post-operative cases and hospital inpatients," she added.

Kirkby's team includes Wendy Davies, a certified canine rehabilitation assistant and veterinary technician who has worked at the VMC for more than 10 years. Davies will assist with new patient appointments on Mondays and be responsible for performing therapy sessions the remainder of the week. Amy Reynolds, a neurology service technician trained in canine rehabilitation, will also be involved in therapy for neurology patients.

"The first and most important part of rehabilitation is establishment of a complete diagnosis," Kirkby said. "Often animals with an obvious or not so obvious injury in one limb will

develop compensatory changes in the rest of the body. A thorough orthopedic and neurologic examination will be performed and all musculoskeletal abnormalities documented and addressed."

Kirkby added that examinations will be performed regularly to assess the effects of therapy and changes in the body.

"Based on the results of the examination and patient history, an individualized treatment plan will be developed for each patient," she said. "A home exercise plan will be a key component, and exercises will be demonstrated to owners during the initial consult."

For more information about the Small Animal Rehabilitation and Fitness Center, go to <http://www.vetmed.ufl.edu/patientcare/services/rehab/>. To make an appointment, contact the small animal hospital front desk at (352) 392-2235.



Dr. Kristin Kirkby and veterinary technician Wendy Davies are shown with Kirkby's dog, Bailey, during one of Bailey's treatments in the underwater treadmill earlier this year.

Ocala couple's relationship with UF veterinarian led to support for new rehabilitation center

Dr. Scott Kerns, a radiologist, and his wife, Dr. Suzie Kerns, a pediatrician, are "people" doctors from Ocala whose commitment to their animals has taken them all over the country and across the state. Throughout their journey, however, one UF veterinarian has consistently provided care or counsel relating to treatment of their beloved pets — their dog, Zozo, and more recently, their cat, Sophie.

The relationship the couple formed with Dr. Kristin Kirkby began soon after the Kernses' dog, Zozo, a mixed breed adopted from Haiti, came to UF in 2007 to receive medical treatment for a head injury sustained in a freak accident that took place just a week before she was to depart for Florida to be with her new family.

During her first days in the VMC's intensive care unit, she was treated for gastrointestinal hemorrhage after nearly bleeding to death. At the time, Kirkby was a surgery resident. A board-certified small animal surgeon, Kirkby now directs UF's new Small Animal Rehabilitation and Fitness Center.

"I didn't actually treat Zozo when she first came in for head trauma," Kirkby said. "I saw her and knew how small and frail and hurt she was. But I met the Kernses when I was at a rehabilitation course in South Florida and they came in with Zozo as the 'class example.' She had come to be treated by our class instructor, Dr. Laurie McCauley."

McCauley is an Illinois-based veterinarian certified in canine rehabilitation therapy, acupuncture and chiropractic.

The couple mentioned that Zozo was not spayed and that whenever she would go into heat, she would take giant steps backward in her recovery process.

"I introduced myself to them and said that I could facilitate her being spayed at UF so that she could have a boarded anesthesiologist on board," Kirkby said. "When they came up for the procedure, I started telling them about my wish to start a rehabilitation service here. They said that they have had to travel state and country looking for this service and how great it would be to have something so nearby."

The Kernses soon donated money and equipment — resources that Kirkby said were essential in the rehabilitation program's successful development.

"Without them, we would not be where we are now," Kirkby said.

The Small Animal Rehabilitation and Fitness Center at UF has now been in operation for about a year and a half, offering services to existing UF patients. In September, the center will begin accepting additional patients from outside the VMC.

The Kernses have been tireless in their efforts to obtain the best possible care for the dog



Dr. Kristin Kirkby holds Zozo during a recent visit to the UF Veterinary Medical Center.

they say has "richly blessed" them throughout the journey. Zozo's medical odyssey has spanned two years and several states and has included both human doctors and veterinarians working in the fields of physical therapy, chiropractic and acupuncture.

"Zozo certainly is well travelled," said Suzie Kerns, who has visited specialists in Illinois and Oregon as well as in Florida. Kerns's sister, Dr. Sharon Forster-Blouin, is a 1992 graduate of the UF veterinary college who is now a feline practitioner in Corvallis, Ore. Forster-Blouin referred the family to a therapist who specializes in cranial-sacral work.

After meeting the Kernses at McCauley's Florida class, Kirkby traveled to Illinois to learn more about the therapist's techniques in order to better treat Zozo closer to home. She and the Kernses also visited with a human chiropractic doctor to take advantage of his expertise in functional neurology.

Study of isolated snakes could help shed light on venom composition

BY SARAH CAREY

While studying a way to more safely and effectively collect snake venom, University of Florida researchers have noticed the venom delivered by an isolated population of Florida cottonmouth snakes may be changing in response to their diet.

Scientists used a portable nerve stimulator to induce venom expulsion from anesthetized cottonmouths, producing more consistent extraction results and greater amounts of venom, according to findings in the journal *Toxicon*.

The study of venoms is important for many reasons, scientists say.

“The human and animal health benefits include understanding the components of venom that cause injury and developing better antivenin,” said Dr. Darryl Heard, an associate professor in the UF College of Veterinary Medicine’s department of small animal clinical sciences. “In addition, the venom components have the potential to be used for diagnostic tests and the development of new medical compounds.”

But in addition to showing the extraction method is safer, more effective and less stressful to both snake and handler than the traditional “milking” technique -- a finding that could lead to better treatment of snakebite from the venomous pit vipers -- Heard and Ryan McCleary, a Ph.D. candidate in biology in UF’s College of Liberal Arts and Sciences, discovered the venom from these particular snakes differs from that of mainland snakes because of their unique diet of dead fish dropped by seabirds.

Heard and McCleary collaborated to develop a safe, reliable and humane technique for collecting venom from cottonmouths as part of a larger study on a specific population of snakes which reside on Seahorse Key, an isolated island near Cedar Key on the Florida’s Gulf Coast.

The venom collection study included data from 49 snakes on Seahorse Key.

“Snakes on this island are noted for their large size,” said Heard, a zoological medicine veterinarian with additional expertise in anesthesia. He added that Harvey Lillywhite, Ph.D., a professor of biology at UF and McCleary’s predoctoral advisor, has confirmed that cottonmouths on Seahorse Key eat primarily dead fish dropped by birds in a large seabird rookery.

“The stimulator is battery-powered and relatively inexpensive. In addition, the anesthetic we used, known as propofol, can easily be transported.”

— Dr. Darryl Heard

Lillywhite also directs UF’s Seahorse Key Marine Laboratory, located in the Cedar Keys National Wildlife Refuge. McCleary hopes to build on earlier studies about the snakes’ ecology and to explore whether evolutionary changes may have affected the composition of the snakes’ venom.

“My interest is in the evolutionary aspect,” McCleary said. “If these snakes already have an abundant source of dead prey, why do they need venom?”

Preliminary findings show some differences in venom components, he added.

Traditionally, venom has been collected from venomous snakes by manually restraining the animal behind the head and having it bite a rubber membrane connected to a collecting chamber.

“This requires the capture of an awake snake, which increases the risk of human envenomation and is also stressful to the snake,” Heard said, adding that manual collection of venom also does not guarantee that all of the venom is collected.

The nerve stimulator is used in human anesthesia to measure the effect of muscle relaxants.

“It delivers a series of electric stimuli, of very low voltage and amperage, and causes no pain or tissue injury,” Heard said. “The electrodes are placed behind the eye, across the area of the venom gland. The nerve stimulator sends a current across the gland, causing reflex contraction and expulsion of the venom.”

The technique allows collection from snakes that might not otherwise give up their venom, which is an essential in the process of creating antivenins for victims of snake bite, Heard said.

“The stimulator is battery-powered and relatively inexpensive,” he said. “In addition, the anesthetic we used, known as propofol, can easily be transported.”

Propofol, which has been prominent in news headlines recently as being linked to the death of singer Michael Jackson, is an ultra-short acting anesthetic administered by intravenous injection. The drug is commonly used to anesthetize animals in veterinary clinical practice, but is not believed to have ever previously been used to anesthetize snakes for venom collection.

Editor’s note: We’re happy to say that the above story, which was released to the national AP wire service Sept. 15, had been picked up by several scientific news outlets, including Science Daily, Medical News Today, Physorg.com and Eurekalert.org at press time. Several other sites used the story and linked back to those sites.



Dr. Darryl Heard, an associate professor in the UF College of Veterinary Medicine’s department of small animal clinical sciences, anesthetizes a cottonmouth snake in preparation for venom extraction on Sept. 9. Heard and Ryan McCleary, a Ph.D. candidate in biology in UF’s College of Liberal Arts and Sciences, have collaborated to develop a safe, reliable and humane technique for collecting venom from cottonmouths — an essential part of the process of making antidotes for snake-bite victims.

(Photo by Sarah Kiewel/University of Florida)



Electrodes placed behind the eyes of the cottonmouth deliver painless electrical current that facilitates the expulsion of venom. Ryan McCleary keeps the snake still as the process begins.

(Photo by Sarah Kiewel/University of Florida)



The nerve stimulator that prompts the reptiles to expel their venom is commonly used in human anesthesia to measure the effect of muscle relaxants. Likewise, the anesthetic given to the snake at the beginning of the process is Propofol, an ultra-short acting anesthetic commonly used to anesthetize animals in veterinary clinical practice, but never to extract snake venom before.

(Photo by Sarah Kiewel/University of Florida)

Basset Hound survives cottonmouth snake bites, thanks to care at UF

BY SARAH CAREY

When Margarita, a 10-year-old Basset Hound, was bitten by a cottonmouth snake recently, her quick-thinking owner rushed the dog to the University of Florida's Veterinary Medical Center for treatment right away.

In doing so, Sandra Fields Seymour, Ph.D., A.R.N.P., a recently retired associate professor in UF's College of Nursing, and her husband, Larry, of Gainesville followed a cardinal rule in preventing death or lasting tissue damage from snake bite: They sought immediate evaluation by a veterinarian.

Margarita, whose owners have now nicknamed her "Snake Bite Warrior," survived her bites and today appears no worse for the wear.

"It was an unfortunate situation where dog and snake were each doing what they were born to do, but with serious consequences for both," Seymour said.

Margarita arrived at the UF VMC on July 3 around midnight with two strike wounds. Soon her signs of swelling, or envenomation, had greatly increased.

"Margarita had obviously received enough venom to cause serious side effects," said Dr. Kate Ogawa, an intern in small animal medicine and surgery. Veterinarians quickly decided to administer antivenin – six vials, in fact.

"She also developed heart arrhythmias, which fortunately did not become severe enough to require treatment," Ogawa said. "We closely monitored Margarita's strike areas and swelling for signs of tissue death that would require surgery. She was lucky. Her wounds healed uneventfully, and she did not need further treatment."

The side effects of snakebite can vary greatly depending on the particular snake, and the dose of venom the animal receives, veterinarians say. Bites from rattlesnakes, cottonmouths and copperheads can result in severe tissue swelling, blood-clotting abnormalities, heart arrhythmias, organ damage and tissue death around the bite site.

Not all pets that are bitten by a venomous snake require antivenin, since occasionally pets will receive a dry bite, with no venom injected, but a prompt evaluation by a veterinarian is recommended. Hospitalization may also be needed for veterinarians to monitor for heart arrhythmias as well as to provide fluid support, pain medication and frequent reassessment.

Although antivenin can be lifesaving, how much to give is a judgment call, since the amount of venom contained in a snake's bite is unknown. In general, however, the more antivenin received quickly, the better, veterinarians say.

"Unfortunately, antivenin is quite expensive and can be cost prohibitive for some owners to administer several vials," Ogawa said. "Additionally, antivenin for veterinary



Larry Seymour with Margarita, AKA "Snake Bite Warrior," and her companion, Mariah, at home after Margarita's recuperation from snake bite wounds.

medicine is currently not being manufactured in this country."

Thanks to the efforts of Dr. Michael Schaer, a UF snake envenomation expert, UF was able to procure an antivenin product from Mexico. That particular product was manufactured for people, but UF was able to obtain permission for animal use from the Food and Drug Administration.

Reactions to antivenin are possible also, which is another reason why victims of snakebite need to be monitored carefully for several days after the antivenin is administered.

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ZOZO, FROM P.1

"We aren't sure which treatment modality or therapist or supplement has made the most difference, but we do know Zozo has defied all odds and expectations," Suzie Kerns said, adding that Dr. Huisheng Xie, a UF veterinary acupuncturist, had played a key role in caring for both of their pets during their hospitalizations at the VMC.

Now Zozo's most debilitating residual deficit is the tendency to tuck her chin between her front legs and literally somersault when she's agitated or confronted by powerful smells.

"To the casual observer, she has a high stepping, prancing gait and a slight head tilt," Kerns said. "To us, she is a miracle and the absolute joy of our lives. She has taught us never to give up hope."

This past April, Kirkby called the Kernses to ask how Zozo was doing. In the process of that conversation, Scott Kerns mentioned their cat Sophie and her cancer problem, whereupon Kirkby mentioned that UF was capable of providing surgery to correct Sophie's condition.

"We trusted Dr. Kirkby and saw an opportunity," Scott Kerns said.

An examination was quickly arranged and successful surgery was performed.

Although the Kernses' beloved Sophie died Sept. 9, the couple feels the months after her surgery were some of the best in Sophie's life.

"We had the time to say goodbye and do what we had to do to have no regrets and no unfinished business," Scott Kerns said. "We are so grateful UF was there to give us this opportunity."

We're on Facebook!

We're excited that the college now has a Facebook page. We hope to use this as just one more venue for posting news about and from the college. Let us know what you think! You can view the page by going to www.facebook.com/ufvetmed.

Ride with Team VetMed

Team VetMed is gearing up for the October Horse Farm Hundred ride on Sunday, October 25, 2009. All monies raised this year will go to the Kevin Anderson Team VetMed Scholarship. Rider sponsorship forms are available on the Team VetMed Web site: <http://team.vetmed.ufl.edu>

CVM Homecoming is Nov. 7

CVM Alumni Homecoming Celebration will take place on a different date than UF Homecoming this year. Our CVM Homecoming is planned for Saturday, Nov. 7 with the Florida Gators taking on the Vanderbilt Commodores.

The college will host a pre-game meal at the Florida Gym four hours before the game kick-off. The web site has all the information you need to purchase pre-game meal tickets and football tickets (limited to two per alumni). Registration runs through Oct. 30.

An enchanted evening



During its annual meeting in Albuquerque, N.M. in August, the Society for Theriogenology hosted a "family and fun" night at the Indian Pueblo Cultural Center. Tameka Phillips, a Ph.D. candidate in Veterinary Medical Sciences, is shown with Fabian Fontenelle, a Zuni-Omaha tribal dancer, during the event. She said having her photo taken was a "true honor" as many Native Americans do not allow photos of themselves to be taken due to their cultural beliefs. Phillips, along with UF CVM theriogenology resident Alana King, attended the event together. Others from the UF CVM who attended the SFT meeting also included Morgan Krause, a junior D.V.M. student, and Dr. John Versteegen.

SNAKE BITE, FROM P.3

“I would urge people to protect themselves as much as possible from venomous snakes, and as such I cannot recommend killing the snake for identification,” Ogawa said. “If the snake is already dead, bringing it in for positive identification can help, as some snakes have more potent venom than others. Dead snakes still can cause envenomation, so extreme care should be taken when moving the body. The antivenin contains antibodies against the venom of most snakes, so knowing exactly what snake it was is not nearly as important as getting treatment as soon as possible.”

Seymour, Margarita’s owner, is very familiar with the UF veterinary college, as her daughter, Amy Stone, D.V.M., Ph.D., is a member of the faculty there.

“I know some may say that we are biased because of this, and while there may be some validity to that notion, actually Amy was in Honduras with a group of students when this happened and the crisis had passed by the time she got home,” Seymour said.

She added that as a health care provider for humans, she was impressed with the VMC staff’s diligence in keeping the family informed.

“Because we received regular reports, we did not feel the need to call every few hours to check on Margarita, although we were terrified that she would not survive,” Seymour said. “The written and verbal instructions that we were given at discharge were wonderful and providers of human health care would do well to take a page from your book on that.”

Drs. Ogawa, Schaer and Kelly Thiemann; veterinary students Morgan Vargo and Ruth West; and veterinary technician Chelle McClure all were intimately involved in Margarita’s care.

“The University of Florida has a team approach and we are fortunate to be able to provide 24-hour care for patients,” Ogawa said. “We are available 24-7, weekends and holidays, to provide necessary treatment for emergency patients.”



Margarita, AKA, Snake Dog Warrior, in the car with her owner, Larry Seymour, heading home from the VMC after treatment for snake bite wounds. (Photo courtesy of Sandra Seymour)

Freshmen learn more about themselves and others during annual orientation event



Dr. Dave Reese, right, learns new communications skills with students in a team exercise.

(Photo courtesy of Dot McColskey)



Dr. Cynda Crawford, right, participates in field games during the Freshmen Orientation and Leadership Experience.

(Photo courtesy of Dot McColskey)

Incoming freshmen took part in the fourth annual Freshmen Orientation and Leadership Experience at Camp Weed in Live Oak, Fla., Aug. 12-13, as part of a learning experience aimed at improving communication, leadership and problem solving skills through large and small group activities.

Students also learn more about their preferences and comfort levels using the Myers Briggs Testing Instrument as a tool.

During the event, students are separated into nine small groups, based on their Myers-Briggs personality types. Faculty and sponsors also participate in these teams. Seven UF CVM faculty members participated this year, including Drs. Michael Schaer, Jeff Abbott, Cynda Crawford, Chito Pablo, Amy Stone, Kevin Anderson and Dave Reese.

Sponsors included Hills Pet Food, FVMA, Merial, Banfield and AVMA Group Health and Liability Insurance Trust and SCAVMA.

“The success of FOLE is due to the sophomore students who volunteer to serve as facilitators,” said Dot McColskey of the Office for Students and Instruction. “For three days, we train these guys to serve as small group leaders. You might have seen them in the foyer, in classrooms or possibly on the picnic tables as we worked through each activity that they would be in charge of.”

McColskey and her coworkers in the Office for Students and Instruction all have a role as well, and begin planning for FOLE as soon as graduation is over.

“The benefit of working close with the students at this level is just priceless,” McColskey said.